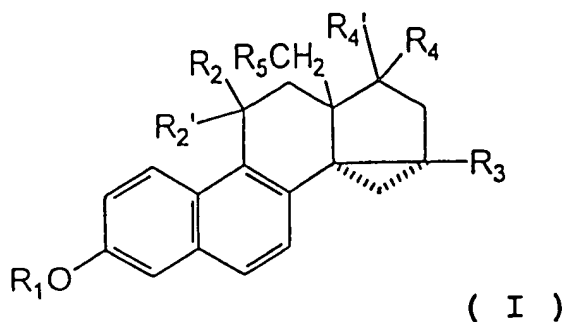


## PATENT CLAIMS

1. Equilenin derivatives of general formula I

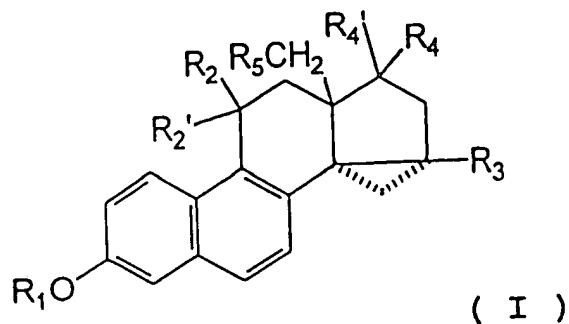


wherein

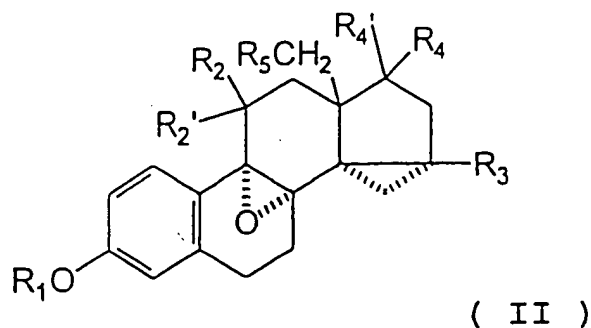
$R_1$  denotes a hydrogen atom, a  $C_1$ - $C_6$ -alkyl group, a  $C_1$ - $C_6$ -acyl group or a benzoyl group,  
 $R_2$  denotes a hydrogen atom and  $R_2'$  denotes a hydrogen atom, a fluorine atom, a hydroxyl group or a  $C_1$ - $C_6$ -acyloxy group or  $R_2$  and  $R_2'$  together denote an oxo group,  
 $R_3$  denotes a hydrogen atom or a methyl group,  
 $R_4$  denotes a hydrogen atom and  $R_4'$  denotes a hydroxyl group or a  $C_1$ - $C_{11}$ -acyloxy group or  $R_4$  and  $R_4'$  together denote an oxo group, a methylene group, a halomethylene group or a dihalomethylene group and  
 $R_5$  denotes a hydrogen atom or a methyl group.

2. Equilenin derivatives according to Claim 1, characterized in that  $R_5$  is a hydrogen atom.
3. Equilenin derivatives according to Claim 1, namely
- 1) 14 $\alpha$ ,15 $\alpha$ -methylenestra-1,3,5(10),6,8-pentaene-3,11 $\beta$ ,17 $\beta$ -triol,
  - 2) 11 $\beta$ ,17 $\beta$ -dihydroxy-14 $\alpha$ ,15 $\alpha$ -methylenestra-1,3,5(10),6,8-pentaen-3-yl benzoate,
  - 3) 11 $\beta$ ,17 $\beta$ -dihydroxy-14 $\alpha$ ,15 $\alpha$ -methylenestra-1,3,5(10),6,8-pentaen-3-yl propionate,
  - 4) 3,11 $\beta$ -dihydroxy-14 $\alpha$ ,15 $\alpha$ -methylenestra-1,3,5(10),6,8-pentaen-17 $\beta$ -yl decanoate,
  - 5) 3,11 $\beta$ -dihydroxy-14 $\alpha$ ,15 $\alpha$ -methylenestra-1,3,5(10),6,8-pentaen-17-one,
  - 6) 3-methoxy-14 $\alpha$ ,15 $\alpha$ -methylenestra-1,3,5(10),6,8-pentaen-11 $\alpha$ ,17 $\beta$ -diyl diacetate,
  - 7) 15 $\beta$ -methyl-14 $\alpha$ ,15 $\alpha$ -methylenestra-1,3,5(10),6,8-pentaene-3,11 $\beta$ ,17 $\beta$ -triol,
  - 8) 11 $\beta$ -fluoro-14 $\alpha$ ,15 $\alpha$ -methylenestra-1,3,5(10),6,8-pentaene-3,17 $\beta$ -diol,
  - 9) 3,17 $\beta$ -dihydroxy-14 $\alpha$ ,15 $\alpha$ -methylene-1,3,5(10),6,8-pentaen-11-one,
  - 10) 3-methoxy-14 $\alpha$ ,15 $\alpha$ -methylenestra-1,3,5(10),6,8-pentaen-11 $\alpha$ ,17 $\alpha$ -diyl diacetate,
  - 11) 3-methoxy-14 $\alpha$ ,15 $\alpha$ -methylene-11-oxoestra-1,3,5(10),6,8-pentaen-17 $\alpha$ -yl acetate,
  - 12) 11 $\beta$ -hydroxy-17,17-difluoromethylene-14 $\alpha$ ,15 $\alpha$ -methylenestra-1,3,5(10),6,8-pentaen-3-yl benzoate, and
  - 13) 14 $\alpha$ ,15 $\alpha$ -17,17-bis-methylenestra-1,3,5(10),6,8-pentaene-3,11 $\alpha$ -diol.

4. Method for producing equilenin derivatives of the invention of general formula I



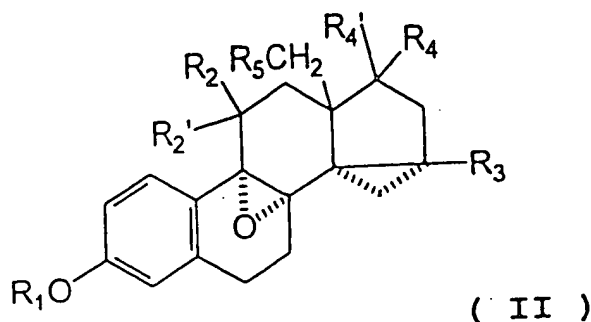
wherein  $R_1$ ,  $R_2$ ,  $R_2'$ ,  $R_3$ ,  $R_4$ ,  $R_4'$  and  $R_5$  have the meaning indicated in Claim 1, by subjecting a compound of general formula II



wherein  $R_1$ ,  $R_2$ ,  $R_2'$ ,  $R_3$ ,  $R_4$ ,  $R_4'$  and  $R_5$  have the meaning indicated in Claim 1, to reaction with diphosphorus tetraiodide in the presence of pyridine and then converting the compound thus obtained to a compound of general formula I in a manner that in itself is known.

5. Pharmaceutical composition containing at least one compound of general formula I according to Claims 1 to 3, optionally together with pharmaceutically compatible auxiliary agents and carriers.
6. Use of the compounds of general formula I according to Claims 1 to 3 for geroprophylaxis in men and women.
7. Compounds of general formula I according to Claims 1 to 3 for use as therapeutically active substances.

## 8. Cyclopropano steroids of general formula II



wherein  $R_1$ ,  $R_2$ ,  $R_2'$ ,  $R_3$ ,  $R_4$ ,  $R_4'$  and  $R_5$  have the meaning indicated in Claim 1

## 9. Cyclopropano steroids according to Claim 8, namely

- 1) 3-methoxy-14 $\alpha$ ,15 $\alpha$ -methylene-8 $\alpha$ ,9 $\alpha$ -oxidoestra-1,3,5(10)-trien-17 $\alpha$ -ol,
- 2) 3-methoxy-14 $\alpha$ ,15 $\alpha$ -methylene-8 $\alpha$ ,9 $\alpha$ -oxidoestra-1,3,5(10)-trien-17 $\alpha$ -yl acetate,
- 3) 3-methoxy-14 $\alpha$ ,15 $\alpha$ -methylene-8 $\alpha$ ,9 $\alpha$ -oxido-18 $\alpha$ -homoestra-1,3,5(10)-trien-17 $\alpha$ -yl propionate,
- 4) 14 $\alpha$ ,15 $\alpha$ -methylene-8 $\alpha$ ,9 $\alpha$ -oxidoestra-1,3,5(10)-trien-3,17 $\alpha$ -diyl diacetate,
- 5) 3-methoxy-15 $\beta$ -methyl-14 $\alpha$ ,15 $\alpha$ -methylene-8 $\alpha$ ,9 $\alpha$ -oxidoestra-1,3,5(10)-trien-17 $\beta$ -ol,
- 6) 11 $\alpha$ -hydroxy-3-methoxy-14 $\alpha$ ,15 $\alpha$ -methylene-8 $\alpha$ ,9 $\alpha$ -oxidoestra-1,3,5(10)-trien-17 $\alpha$ -yl acetate,
- 7) 3-methoxy-14 $\alpha$ ,15 $\alpha$ -methylene-8 $\alpha$ ,9 $\alpha$ -oxidoestra-1,3,5(10)-trien-11 $\alpha$ ,17 $\alpha$ -diyl diacetate and
- 8) 3-methoxy-11 $\alpha$ -hydroxy-8 $\alpha$ ,9 $\alpha$ -oxido-14 $\alpha$ ,15 $\alpha$ -methylenestra-1,3,5(10)-trien-17 $\beta$ -yl acetate.